

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA

TESSENDERLO KERLEY, INC.,

No. C 11-04100 WHA

Plaintiff,

v.

CLAIM CONSTRUCTION ORDER

OR-CAL, INC.,

Defendant.

INTRODUCTION

In this patent infringement action involving horticulture technology, the parties seek construction of three terms found in two asserted patents. For the reasons stated below, one term will be construed and two terms will not be construed at this time.

STATEMENT

Plaintiff Tessenderlo Kerley, Inc. and defendant Or-Cal, Inc. are competing manufacturers of sun protectants for crops. TKI asserts infringement of United States Patents 6,110,867 and 6,464,995, both of which claim methods for utilizing finely divided particulate materials to enhance horticulture.

The '867 patent — filed in 1997, issued in August 2000, and reissued after reexamination in 2006 — disclosed examples of using calcined kaolin, a particulate material, to increase carbon dioxide assimilation in a few different plant species. Claim 1 is a representative claim (col. 9; reexamination certificate col. 1):

1 A method for enhancing the photosynthesis of
2 horticultural crop by increasing carbon dioxide
3 assimilation of said horticultural crop which
4 comprises

5 applying to the surface of said horticultural
6 crop an effective amount of one or more
7 highly reflective particulate materials, said
8 particulate materials

9 being finely divided, and

10 wherein the particles as applied
11 allow for the exchange of gases on
12 the surface of said crop and

13 the finely divided particulate
14 materials have a median individual
15 particle size below about 3 microns.

16 The limitation of “increasing carbon dioxide assimilation” was added during reexamination to
17 overcome a prior-art reference, *Moreshet et al.*, “Effect of Increasing Foliage Reflectance on
18 Yield, Growth, and Physiological Behavior of a Dryland Cotton Crop,” 19 CROP SCIENCE 863
19 (1979).

20 The '995 patent, a related patent arising out of the same parent application as the '867
21 patent, also claimed the use of particulate materials to enhance horticultural effects via a similar
22 mechanism. Claim 23 is a representative claim (col. 12):

23 A method for enhancing the horticultural effect of
24 horticultural substrates selected from the group
25 consisting of fruits, vegetables, trees, flowers,
26 grasses, roots, and landscape and ornamental plants
27 which comprises

28 applying a slurry comprising water,

a surfactant, and

one or more particulate materials, selected
from the group consisting of calcium
carbonate, hydrous kaolin, calcined kaolin
and mixtures thereof,

to the surface of said substrate to form a
membrane comprised of one or more
particulate layers and the surfactant,

said layers comprising one or more
particulate materials,

1 said particulate materials being finely
2 divided, and

3 wherein said membrane allows for the
4 exchange of gases on the surface of said
5 substrate.

6 TKI alleges that Or-Cal infringed by manufacturing sun protectant products with calcium
7 carbonate particles.

8 **ANALYSIS**

9 Courts must determine the meaning of disputed claim terms from the perspective of a
10 person of ordinary skill in the pertinent art at the time the patent was filed. *Chamberlain Group,*
11 *Inc. v. Lear Corp.*, 516 F.3d 1331, 1335 (Fed. Cir. 2008). While claim terms are generally given
12 their ordinary and customary meaning, the patent's specification is always highly relevant to the
13 claim construction analysis. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–15 (Fed. Cir. 2005).
14 Finally, courts also should consider the patent's prosecution history, which “can often inform the
15 meaning of the claim language by demonstrating how the inventor understood the invention and
16 whether the inventor limited the invention in the course of prosecution, making the claim scope
17 narrower than it would otherwise be.” *Phillips*, 415 F.3d at 1317 (internal quotations omitted).

18 The intrinsic record is the primary resource in properly construing claim terms. Although
19 courts have discretion to consider extrinsic evidence, including dictionaries, scientific treatises,
20 and testimony from experts and inventors, such evidence is “less significant than the intrinsic
21 record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d
22 at 1317.

23 A claim term carries its ordinary and customary meaning except in certain situations:
24 *First*, where the patentee has unequivocally disavowed a certain meaning to obtain his patent, the
25 doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim
26 congruent with the scope of the surrender. *Omega Engineering, Inc. v. Raytek Corp.*, 334 F.3d
27 1314, 1324 (Fed. Cir. 2003). *Second*, a court may also constrict the ordinary meaning if the
28 patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim
term in either the specification or prosecution history. *Third*, a court may constrict the ordinary
meaning when the ordinary meaning of the term “chosen by the patentee so deprives the claim of

clarity” as to require resort to the other intrinsic evidence for a definite meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366–67 (Fed. Cir. 2002).

1. THE ’867 PATENT: “EFFECTIVE AMOUNT.”

The term, “effective amount,” is found in independent claims 1 and 38 of the ’867 patent. The parties dispute whether the term should be construed broadly to mean any desired amount (Or-Cal’s position) or more narrowly to mean the amount sufficient to improve photosynthesis by increasing carbon dioxide uptake (TKI’s position). Neither party has explained *why* their proposed construction would be relevant to issues of invalidity or infringement, and this Court fails to see why this dispute matters. Nonetheless, the Court will construe the disputed term, as requested.

The ’867 patent specification, at two different points, defines “effective amount” as the amount sufficient to enhance photosynthesis (col. 4):

The surface of said horticultural crop is treated with an amount of one or more highly reflective particulate materials that is effective in enhancing photosynthesis of the horticultural crop.

* * *

The the [sic] particle treatment may be applied as one or more layers of finely divided particulate material. The amount of material applied is within the skill of one of ordinary skill in the art. The amount will be sufficient [sic] to improve photosynthesis of the crop to which these particles are applied.

The prosecution history also supports defining “effective amount” narrowly to mean the amount sufficient to enhance photosynthesis. During reexamination, the PTO examiner’s “Statement of Reasons for Patentability” stated that “the only proper interpretation of ‘an effective amount’ is an amount that is effective to enhance photosynthesis of horticultural crops by increasing carbon dioxide assimilation of said crops” (Dkt. No. 108-6 at 7).

Or-Cal actually *agrees* that the “effective amount” is the amount that produces the desired result of enhancing photosynthesis by increasing carbon dioxide assimilation (Or-Cal Br. 14–15). Or-Cal’s only argument in opposition of TKI’s proposed construction is that it would be redundant because the limitation of “enhancing photosynthesis by increasing carbon dioxide

assimilation” is specified elsewhere in the claim. Or-Cal’s redundancy argument is not enough to reject TKI’s proposed construction, which is *admittedly accurate*. A purpose of claim construction is to remove ambiguity. Here, construing the term “effective amount” to mean Or-Cal’s broader “desired result” would add ambiguity as to the patentee’s intended, narrower meaning, which was “the amount sufficient to enhance photosynthesis by increasing carbon dioxide uptake.” Whether this is enabled by the disclosure is a matter for another day.

Accordingly, the term “effective amount” shall be construed to mean “an amount that is sufficient to enhance photosynthesis of horticultural crops by increasing carbon dioxide assimilation of said crops.” At the claim-construction hearing, neither party chose not to argue against this construction, which was previously provided in a tentative order.

2. THE ’867 PATENT: “PARTICLES AS APPLIED ALLOW FOR THE EXCHANGE OF GASES ON THE SURFACE OF SAID CROP.”

This term, “particles as applied allow for the exchange of gases on the surface of said crop,” is found in independent claims 1 and 38 of the ’867 patent. TKI proposes the following construction: “there is gas exchange on a treated surface which includes stomata and the particles do not materially affect gas exchange such that stomatal conductance is not materially reduced.” Or-Cal proposes the following construction: “the particles are applied in a manner that allows for transpiration without hindering passage of water vapor, oxygen and CO₂.” These disputes are arguably relevant to invalidity contentions. On the present record, however, the term cannot be meaningfully construed. If construction of the term proves necessary, it will be construed before the jury is charged at the end of the trial, and its construction will be based upon a more fully developed record. In particular, the dispute over whether the claimed particles must be applied to at least one surface with stomata cannot be meaningfully resolved on the present record.

As an initial matter, it is undisputed that gas exchange in crops occurred on a surface with stomatas (Or-Cal Br. 3; *see also* col. 7). The ’867 patent claims a method wherein the particles are “appl[ied] to *the surface* of said horticultural crop” and “wherein the particles as applied allow for the *exchange of gases on the surface* of said crop” (col. 9) (emphasis added). The use of a definitive article, ‘the,’ twice in the same claim sentence suggests that the particles

1 are applied to the surface where gas exchange occurs (i.e., the surface with stomata). At oral
2 arguments, Or-Cal disputed this reading of the claim language, arguing that “apply to the
3 surface” and “exchange of gases on the surface” can refer to two *different and distinct* surfaces
4 (i.e., the particles were applied to the surface without stomata but allow gases exchange on the
5 surface with stomata). Or-Cal’s reading of the claim language is tortured. It is unlikely that a
6 skilled artisan would understand “the surface” to refer to one surface at the beginning of the
7 claim sentence and refer to an entirely distinct surface at the end of the claim sentence.
8 Nonetheless, this order does not need to resolve the disputed reading now because the entire
9 record does not allow for meaningful construction of the term, discussed below.

10 TKI argues that the reexamination history supports its construction. During
11 reexamination, the patentee differentiated his invention from the prior art Moreshet reference by
12 arguing that his method of applying particles “allow[ed] for the exchange of gases *from the plant*
13 *surface*” whereas the particle coating in Moreshet reduced water transpiration, reduced carbon
14 dioxide, and reduced stomatal conductance (Dkt. No. 108-5) (emphasis added). The patentee
15 presented experimental results showing that in Moreshet the 25% kaolin was applied to apple
16 leaves by applying the spray “over the top of the canopy from a standard, tractor-mounted boom
17 sprayer at a rate of approximately 400 liters/ha,” there was reduced gas exchange by the stomatas
18 (Dkt. Nos. 108-7, 78-1). There is nothing in the record, however, to prove that Moreshet’s
19 method of application (spray over the top of the canopy) would have put the kaolin on all
20 surfaces of the apple leaves, including the surface with stomata. Thus, on this record, there is not
21 enough to show that the patentee unequivocally disavowed application of the claimed particles to
22 only non-stomata surfaces to obtain his patent on reexamination.

23 TKI also argues that because Moreshet’s 25% kaolin treatment reduced gas exchange,
24 including carbon dioxide uptake, the kaolin *must have* been applied to a surface with stomata;
25 otherwise, the kaolin would not have interfered with gas exchange. There is, however,
26 insufficient expert testimony to support this factual assertion. A more developed record will help
27 clarify this scientific proposition.
28

1 Or-Cal argues that the claimed invention encompasses application to only non-stomata
2 surfaces because the specification states that the claimed particles do not have to be applied to
3 the *under surface* of a crop (col. 4)(emphasis added):

4 The surface of said horticultural crop is treated with
5 an amount of one or more highly reflective
6 particulate materials that is effective in enhancing
7 photosynthesis of the horticultural crop. The
8 treatment coverage of said crop is within the skill of
9 the ordinary artisan [sic]. Less than full crop
10 coverage is within the scope of this invention and
11 can be highly effective, for example, *neither the
12 under surface of the crop (that which is not exposed
13 directly to the source of light) need be treated by
14 the method of this invention* nor must the upper
15 surface of the crop be completely covered; although
16 full substrate coverage can provide additional
17 benefits such as effective disease control, smoother
18 fruit surface, reduced bark and fruit cracking, and
19 reduced russetting.

20 However, Or-Cal's argument — that the above-quoted passage means that the claimed particles
21 need not be applied to a surface with stomata — is unpersuasive. True, the under surface of
22 some crops (such as apples and peaches) have more stomata than the upper surface. But
23 importantly, Or-Cal's own expert admits that even apples and peaches can have *some* stomata on
24 the upper surface (Jubert Decl. ¶¶ 20–21). At the claim-construction hearing, Or-Cal's counsel
25 argued that apples and peaches only have stomata on the under surface and no stomata on the
26 upper surface. Again, there is nothing in the record to support this factual argument. Moreover,
27 Or-Cal's expert also admits that some plants, such as bean plants (which is arguably
28 encompassed by the patent), have similar amounts of stomata on both surfaces (Jubert Decl. ¶
20). Therefore, simply because the specification states that the claimed particles do not need to
be applied to the under surface, it does not necessarily follow that the particles do not need to be
applied to a surface with stomata, at least on the present record.

Accordingly, the term “particles as applied allow for the exchange of gases on the surface
of said crop,” cannot be meaningfully construed. If construction of the term proves necessary, it
will be construed before the jury is charged at the end of the trial, and its construction will be
based upon a more fully developed record.

1 **3. THE '995 PATENT: "SAID MEMBRANE ALLOWS FOR THE**
 2 **EXCHANGE OF GASES ON THE SURFACE OF SAID SUBSTRATE."**

3 In their claim-construction briefs, both parties agreed that construction of the '995 patent
 4 term, "said membrane allows for the exchange of gases on the surface of said substrate," would
 5 mimic the '867 term, "particles as applied allow for the exchange of gases on the surface of said
 6 crop" (Dkt. No. 106 at 23, Dkt. No. 110 at 6; *see* Dkt. No. 104 at 18). For that reason, neither
 7 party devoted more than a page of their briefs to discussing the '995 patent.

8 During the claim-construction hearing, however, Or-Cal reneged on its earlier agreement
 9 because of the Court's tentative construction of the '867 term was unfavorable to Or-Cal. At the
 10 hearing, Or-Cal argued that the construction of the '995 patent cannot mimic the '867 patent
 11 unless the Court finds that Or-Cal's proposed construction controls for both. Again, this was
 12 inconsistent with Or-Cal's brief, which stated: "The parties agree that the 'allow[s] for the
 13 exchange of gases on the surface' phrases of the two patents should be given the same
 14 construction" (Dkt. Nos. 110 at 6). Nonetheless, in an abundance of caution, this order will not
 15 construe the term in the '995 patent. The present record and briefs are wholly inadequate to
 16 allow for meaningful construction. If construction of the term proves necessary, it will be
 17 construed before the jury is charged at the end of the trial, and its construction will be based
 18 upon a more fully developed record

19 **CONCLUSION**

20 For the reasons provided herein, the construction set forth above will apply in this
 21 dispute. The Court will reserve the authority, on its own motion, to modify this construction if
 22 further evidence warrants such a modification. Counsel, however, may not ask for modification.

23 **IT IS SO ORDERED.**

24 Dated: August 9, 2012.

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 26 _____
 27 WILLIAM ALSUP
 28 UNITED STATES DISTRICT JUDGE